REMARKS

The Office Action has been carefully considered. The present Reply is intended to be a complete response thereto and to place the case in condition for allowance. A petition and fee for a three-month extension of time is filed herewith.

Claims 31-44, 48-55, and 58-90 are pending.

THE SPECIFICATION IS PROPER

The Examiner objects to the specification because the chemical composition $CH_2CH_2CH_2Si(OCH_3)_3$, as recited on page 5, third full paragraph (as previously amended), is unstable. Applicant respectfully submits that this paragraph should be read in conjunction with the immediate prior paragraph which recites the formula R-SiX_3. Accordingly, one skilled in the art, reading these paragraphs, would have understood that an R preceeds the chemical composition $CH_2CH_2CH_2Si(OCH_3)_3$, particularly where immediately after the chemical compsition, the paragraph recites "where R is a reactive functional group and X is the methoxy group." Therefore, the specification is proper and withdrawal of the objection is respectfully requested.

THE CLAIMS ARE PROPER

Claim 59 stand objected to because the Examiner alleges that the recitation of "the thickness of the layer, or layers, of thermoplastic resin is/are" is incongruent with independent claim 31, from which claim 59 depends, which requires only a single layer of thermoplastic resin. Applicant respectfully submits that claim 59 recites layer or layers in the alternative. Although claim 31 recites a single layer of thermoplastic, claim 59 also recites layer in the

singular, and therefore, is in agreement with claim 31. As such, Applicant avers that the claim is proper and respectfully requests withdrawal of the objection.

THE CLAIMS HAS PROPER WRITTEN DESCRIPTION

Claims 62 and 65 stand rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. The Examiner alleges that the silane $RCH_2CH_2CH_2Si(OCH_3)_3$, lacks written description and is new matter. Applicant respectfully traverses the rejection.

Please note that page 5, third paragraph (as previously amended), discloses R-SiX_3 and $CH_2CH_2CH_2Si(OCH_3)_3$ where R is a reactive functional group and X is the methoxy group. This disclosure clearly provides proper written description for the silane $RCH_2CH_2CH_2Si(OCH_3)_3$ as discussed above.

THE CLAIMS ARE NOT INDEFINITE

Claims 62 and 65 stand rejected under 35 U.S.C. § 112, first paragraph, as being indefinite. The Examiner alleges that "X" lacks antecedent basis and therefore it is not clear to what "X" and "R" refer. Applicant respectfully traverses the rejection.

Applicant notes that claim 65 depends on claim 64 which provides antecedent bases for "X" and "R." Further, "X" and "R" are the same as those recited in claim 64. There is no reason to assume that they are any different than those of claim 64.

With regard to claim 62, applicant respectfully submits that "X" refers to the methoxy groups as referred to on page 5, third paragraph (as previously amended).

Therefore, because the claims are not indefinite, Applicant respectfully request withdrawal of the rejection.

THE CLAIMS ARE NOT ANTICIPATED

Claims 31-32, 36-37, 42-43, 50-52, and 60 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Cayless et al. (U.S. Patent No. 5,013,381). Claims 63-64, 71-72, 77, 79-81, 84, and 90 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Amort et al. (U.S. Patent No. 4,118,540). Applicant respectfully traverses the rejections.

To anticipate a claim, the reference must teach every element of the claim. See MPEP § 2131. "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by the claim, but this is not an *ipsissimis verbis* test, i.e., identity of terminology is not required. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

The cited references fail to disclose every element of the claimed invention. In particular, Cayless et al. fail to disclose that the pre-treatment layer resists corrosion. Cayless et al. disclose a process for bonding metals by cleaning and treating the naturally occurring metal oxide layer of a metal with a solution of a salt of yttrium or lanthanide metals. A polymeric adhesive, such as epoxy resins, acrylic resins, or polyurethane resins, is then used to bond two pieces of treated metal together. Cayless et al. disclose that the treatment increases adhesive

binding strength between the two pieces of metal. However, the reference fails to disclose that the treatment resists corrosion.

On the other hand, the present invention is concerned with providing a coating for the metal to resist corrosion, not for gluing two pieces of metals together. As such, the corrosion resistance of the pre-treatment layer of the present invention is of the utmost importance. Contrary to the present invention, Cayless et al. is silent with respect to corrosion resistance. This is not contemplated by Cayless et al., because the coated surface is affixed to another metal surface which minimizes exposure of the coated surface to the environment. Corrosion is not a concern of this arrangement because the coated surfaces are not exposed. The present invention, however, is not concerned with binding two pieces of metals. Thus, the coated surface is exposed to the environment; and it is imperative that the pre-treatment resists corrosion. Otherwise, the lamination process of the present invention would fail to serve its intended purpose, i.e. resisting corrosion. Therefore, Cayless et al. fail to disclose every element of the claimed invention.

With regard to claims 63-64, 71-72, 77, 79-81, 84, and 90, Amort et al. fail to disclose the a separate step of applying a coating of thermoplastic resin. Amort et al. disclose a laminate comprising an inorganic oxidic or metallic surface and a polymer. The interface between the inorganic oxidic or metallic surface and the polymer contains a silane having a capped functional group as an adhesivizing agent adhering the inorganic oxidic or metallic surface and the polymer. The laminate is produced by applying the silanes directly to the surface in the form of a solution. The silane of Amort et al. is used alone (column 3, lines 31-59; and examples 1-3) or added to the organic polymer as a mixture (column 3, lines 60-66; and column 4, lines 8-13).

On the other hand, the silane coating and the thermoplastic resin coating of the present invention involves two different treatment. The cleaned metal strip is first pre-treated with silanes, and then coated with the thermoplastic resin. This is not disclose by Amort et al. which uses the silane alone as a coating or the silane as a mixture with the organic polymer. In the latter case, Amort et al. add the silane to the organic polymer as a mixture, and then coating the steel strip with the mixture. Thus, Amort et al. coats the steel strip in a single treatment rather than two treatments as in the present invention. The present invention differs from Amort et al. in that it does not mix the silane with the thermoplastic resin. These two components are coated on the metal strip separately, rather than in one single step as taught by Amort et al. Therefore, Amort et al. fail to disclose every element of the claimed invention.

Because the cited references fail to disclose every element of the claimed invention, Cayless et al. and Amort et al. do not anticipate the claims within the meaning of 35 U.S.C. § 102. Accordingly, Applicant respectfully requests withdrawal of the rejections.

THE CLAIMS ARE NOT OBVIOUS

Claims 33-34, 38-41, and 59 stand rejected under 35 U.S.C. § 103(a) as being obvious over Cayless et al. Claims 33-34, 38-41, and 59 stand rejected under 35 U.S.C. § 103(a) as being obvious over Jones et al. (U.S. Patent No. 5,725,944) or Heyes (U.S. Patent No. 5,238,517) in view of Cayless et al. Claim 35 stands rejected under 35 U.S.C. § 103(a) as being obvious over Cayless et al. or over Jones et al. or Heyes in view of Cayless et al., as applied to claim 31, and further in view of Baker et al. (U.S. Patent No. 3,775,151). Claims 67-68 and 73-76 stand rejected under 35 U.S.C. § 103(a) as being obvious over Amort et al. Claims 63-64, 66-69, 71-77, 79-84, and 88-90 stand rejected under 35 U.S.C. § 103(a) as being obvious over Jones et al.

or Heyes in view of Amort et al. Claim 70 stands rejected under 35 U.S.C. § 103(a) as being obvious over Amort et al. or over Jones et al. or heyes in view of Amort et al., as applied to claim 63, and further in view of Baker et al.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. See MPEP 2143.

First, the references, taken alone or in combination, fail to disclose every element of the claimed invention. The deficiencies of Cayless et al. and Amort et al. are discussed above. The Examiner relies on Jones et al., Heyes et al., and Baker et al. to disclose various elements of the dependent claims. However, because the deficiencies of Cayless et al. and Amort et al. are not satisfied by the additional references, the combination of the references still fail to disclose every element of the claimed invention.

Second, there is no motivation to combine Jones et al. or Heyes with either Cayless et al. or Amort et al. The Examiner avers that it would have been obvious to combine the references to "increase adhesion of the thermoplastic layer to the metal surface." This motivation may have been sound if the polymer of Jones et al. and Heyes are the same as Cayless et al. and Amort et al. However, the polymer used are different. Cayless et al. disclose the use of epoxy resins, acrylic resons, polyurethane resins, vinyl resins, and phenolic resins (see column 3, lines 3-6); and Amort et al. disclose epoxy resins, urethane resins, polyester resins, resins obtained by condensation of aldehydes with phenols and/or

ureas, etc. (see column 2, line 66 to column 3, line 10). None of these polymers coidcide with the polymers disclosed by Jones et al. and Heyes. Jones et al. disclose poly(ethylene-co-diethylene terephthalate)polyesters; and Heyes discloses polypropylene. Because the polymers used are different, one of ordinary skill in the art would not have been motivated to use the yttrium or silane treatment of Cayless et al. or Amort et al., respectively, with the coating process of Jones et al. or of Heyes, because there is no expectation that the yttrium of Cayless et al. or silanes of Amort et al. would react in the same way with the polymers of Jones et al. or of Heyes. Cayless et al. and Amort et al. discloses the use of resins in conjuction with yttrium and silanes, while Jones and Heyes disclose the use of thermoplastic. The resins are liquid which reacts to formed a hardened polymer. During the polymerization process, these resins also react with the yttrium or silanes to form a chemical bonds, hence enhancing adhesiveness through chemical bonding. On the other hand, the thermoplastics of Jones et al. and Heyes coat the metal through a melting/solidifying process rather than a chemical reaction. In the process of Jones et al. and Heyes, the melter polymer is disposed over the metal to form a covering film upon cooling. No chemical reaction takes place. As such, even if yttrium or silane is present, there would be no chemical bond between the polymer and the yttrium or silane to improve bonding. Therefore, one of ordinary skill in the art would not use the yttrium or silanes with the thermoplastic of Jones et al. and Heyes, because the lack of a chemical reaction would not have improved the bonding between the polymer and the metal surface. Thus, there is no motivation to combine Jones et al. or Heyes with Cayless et al. or Amort et al.

Because the cited references, take alone or in combination, fail to disclose every element of the claimed invention, and because there is no motivation to combine the

references, the references do not render the claims obvious within the meaning of 35 U.S.C. § 103(a). Accordingly, Applicant respectfully requests withdrawal of the rejection.

ALLOWABLE CLAIMS

Applicant gratefully acknowledges the Examiner indicating claims 44, 48-49, and 78 allowable if rewritten in independent form.

CONCLUSION

Applicant has responded to the Office action mailed September 29, 2003. A petition and fee for a three-month extension of time are filed herewith. All of the claims are now believed to be allowable and favorable action is respectfully requested.

In the event that there are any questions relating to this Amendment or to the application in general, it would be appreciated if the examiner would telephone the undersigned attorney concerning such questions so that the prosecution of this application may be expedited.

Please charge any shortage or credit any overpayment of fees to BLANK ROME LLP, Deposit Account No. 23-2185 (111869-00113). In the event that a petition for an extension of time is required to be submitted herewith and in the event that a separate petition does not accompany this response, applicant hereby petitions under 37 C.F.R. 1.136(a) for an extension of time for as many months as are required to render this submission timely.

Any fees due are authorized above.

Respectfully submitted,

Date: March 29, 2004

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